

**AMENDMENTS TO THE CLAIMS**

- 1 (Currently amended). A three dimensional periodic structure, comprising:
- two substances having different dielectric constants periodically distributed in a three dimensional space, wherein at least one of said substances is a solid, and
- a conductive film having independent conductive particles or clusters of a plurality of conductive particles coarsely distributed therein at an interface between the two substances.
- 2 (Previously presented) A three dimensional periodic structure according to claim 1, wherein the conductive film has a surface resistivity of about  $0.3 \Omega/\text{square}$  or more at an interface between the two substances.
- 3 (Previously presented). A three dimensional periodic structure according to claim 2, wherein the conductive film comprises a conductive material having a conductivity of about  $10^3 \text{ S/cm}$  or more.
- 4 (Original). A three dimensional periodic structure according to claim 3, wherein the conductive film is an electroless plating film on a surface of at least one of the two substances.
- 5 (Previously presented). A three dimensional periodic structure according to claim 2, wherein the conductive film is an electroless plating film on a surface of at least one of the two substances.

6 (Previously presented). A three dimensional periodic structure according to claim 2, wherein the conductive film comprises Cu, Ni or InSb.

7 (Previously presented). A three dimensional periodic structure according to claim 2, wherein one of the two substances is air and is disposed in a diamond shaped space.

8 (Canceled).

9 (Previously presented). A three dimensional periodic structure according to claim 1, wherein the conductive film comprises a conductive material having a conductivity of about  $10^3$  S/cm or more.

10 (Previously presented). A three dimensional periodic structure according to claim 9, wherein the conductive film is an electroless plating film on a surface of at least one of the two substances.

11 (Previously presented). A three dimensional periodic structure according to claim 1, wherein the conductive film is an electroless plating film on a surface of at least one of the two substances.

12 (Previously presented). A three dimensional periodic structure according to claim 1, wherein the conductive film comprises Cu, Ni or InSb.

13 (Previously presented). A three dimensional periodic structure according to claim 1, wherein one of the two substances is air and is disposed in a diamond shaped space.